

REMARKS

Claims 19, 22-24, 35 and 40-48 are pending. By this Amendment, claims 19, 22, 23, 35, 40 and 41 are amended, and claims 20, 21, 38 and 39 are cancelled.

Objected-to claims 23 and 41 have been rewritten in independent form. Independent claim 19 has been amended to incorporate the features previously recited in dependent claims 20 and 21. Independent claim 35 has been amended, similar to claim 19, to incorporate the features of previous claims 38 and 39. Claims 19 and 35 have been further amended to recite that the variation (in air-fuel ratio among the plurality of cylinders) is detected. Dependent claims 22 and 40 have been amended to correct their dependencies (in view of the cancelled claims) and to clarify that the correction of the fuel injection quantity is "for reducing the variation". The amendments are fully supported by the previous claims and by the specification. Thus, no new matter is added by the above amendments.

Applicants note with appreciation the allowance of claims 43-48. Applicants also note with appreciation the identification of allowable subject matter in claims 23, 24, 41 and 42. As noted above, claims 23 and 41 have been rewritten in independent form. Thus, claims 23, 24, 41 and 42 also are allowable.

Claims 19-22, 35 and 38-40 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,377,654 to LoRusso et al. This rejection is respectfully traversed as it might be applied to remaining claims 19, 22, 35 and 40.

LoRusso et al. does not disclose or suggest detecting a variation in an air-fuel ratio among the plurality of cylinders of the internal combustion engine, and correcting a fuel injection quantity on the basis of an operation angle of an intake valve of each of the cylinders, so as to reduce the variation in the air-fuel ratio when the variation is detected, as recited in independent claims 19 and 35. As described, for example, at col. 5, lines 25-53, LoRusso et al. concurrently (see col. 5, lines 51-53) determines the average desired fuel

charge and the desired deviation in valve lift between each of the cylinders. LoRusso et al. does not disclose correcting a fuel injection quantity on the basis of an operation angle of an intake valve of each of the cylinders so as to reduce the variation in the air-fuel ratio when such variation is detected.

The Office Action states that the control apparatus of LoRusso et al. "also controls the fuel quantity (the fuel charge) on the basis of a correction signal." It is believed that the Office Action is referring to col. 6, lines 44-51, where LoRusso et al. describes a "second alternative embodiment". This second alternative embodiment is described as being the same as the first embodiment "except that if the variation of lift in a particular valve 28' is beyond predetermined acceptable limits of variation from the lift of the other valves 28', then the EEC microprocessor 18' sends out a correction signal to vary the fuel pulse width in the corresponding fuel injector 110." While this may control or correct a fuel injection quantity for that particular intake valve, it does not correspond to correcting "a fuel injection quantity on the basis of an operation angle of an intake valve...so as to reduce the variation in the air-fuel ratio...", as recited in independent claims 19 and 35. Col. 6, lines 44-51 merely indicates that the fuel pulse width is corrected based on a variation in lift (not an operation angle) of an intake valve, and the correction is not described as reducing a variation in the air-fuel ratio.

Accordingly, LoRusso et al. does not disclose or suggest the combinations of features recited in independent claims 19 and 35, or their corresponding dependent claims 22 and 40. LoRusso et al. also does not disclose or suggest the further features of dependent claims 22 and 40, in which an amount of correction of the fuel injection quantity for reducing the variation (in air-fuel ratio among the plurality of cylinders) is increased as the operation angle of the intake valve is decreased. Withdrawal of the rejection of claims 19, 22, 35 and 40 is requested.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Mario A. Costantino
Registration No. 33,565

JAO:MAC/ccs

Date: April 1, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE
AUTHORIZATION
Please grant any extension
necessary for entry;
Charge any fee due to our
Deposit Account No. 15-0461